

What Is Claimed Is:

1. A heater subassembly for a solid state heater comprising:

a block body having slot sized to receive a solid state heater material, the block body including a pair of opposing openings with the slot disposed therebetween, each opening in communication with a bore in the block body, each bore terminating at one end in a terminal entrance;

a pair of terminals, one end of each terminal connected to a lead wire, the other end of each terminal including a spring, each terminal positioned in each bore, with a portion of each spring extending beyond the opening and into the slot; and

a heater made of a PTCR material or a NTCR material, a portion of the heater disposed in the slot and retained in place by the springs of the terminals.

2. A soft body heater comprising:

a) the heater subassembly of claim 1; and

b) a soft casing completely surrounding the heater subassembly with the lead wires extending through the soft casing for connection to a power source.

3. A soft body heater comprising:

2 a) the heater subassembly of claim 1; and
3 b) a soft casing surrounding a portion of the heater
4 subassembly, a remaining portion of the heater subassembly
5 covered by a molding compound.

6 4. The soft body heater of claim 3, wherein the soft
7 casing is molded around the heater subassembly.

1 5. The soft body heater of claim 4, wherein the soft
2 casing is formed with a cavity sized to receive the heater
3 subassembly, the molding compound filling remaining portions of
4 the cavity not occupied by the heater subassembly.

1 6. A rigid body heater comprising:

2 a) the heater subassembly of claim 1; and
3 b) a rigid body having a cavity sized to receive the
4 heater subassembly and envelop a portion thereof, a remaining
5 portion of heater subassembly covered by a molding compound.

1 7. The heater assembly of claim 1, wherein each opening
2 is formed by a channel in the block body, each channel including
3 a stop, with each spring terminal including a tang, the tang
4 positioned on the terminal to engage the stop once the terminal
5 is inserted to prevent removal of the terminal from the block.

1 8. The soft body heater of claim 2, wherein each opening
2 is formed by a channel in the block body, each channel including
3 a stop, with each spring terminal including a tang, the tang
4 positioned on the terminal to engage the stop once the terminal
5 is inserted to prevent removal of the terminal from the block.

1 9. The soft body heater of claim 3, wherein each opening
2 is formed by a channel in the block body, each channel including
3 a stop, with each spring terminal including a tang, the tang
4 positioned on the terminal to engage the stop once the terminal
5 is inserted to prevent removal of the terminal from the block.

1 10. The rigid body heater of claim 6, wherein each opening
2 is formed by a channel in the block body, each channel including
3 a stop, with each spring terminal including a tang, the tang
4 positioned on the terminal to engage the stop once the terminal
5 is inserted to prevent removal of the terminal from the block.

1 11. A method of making a soft body heater comprising the
2 steps of:

- 3 a) providing the heater subassembly of claim 1; and
4 b) forming a soft casing entirely around the heater
5 subassembly or forming the soft casing with a cavity, inserting
6 the heater subassembly into the cavity, and using a molding
7 compound to cover a remaining portion of the heater subassembly.

1 12. The method of claim 11, wherein the soft casing is
2 molded entirely around the heater subassembly.

1 13. The method of claim 11, wherein the soft casing is
2 formed with the cavity, the heater subassembly is inserted in
3 the cavity and the molding compound covers the remaining portion
4 of the heater subassembly.

1 14. A method of making a rigid body heater comprising the
2 steps of:

- 3 a) providing the heater subassembly of claim 1; and
4 b) forming a rigid casing with a cavity;
5 c) inserting the heater subassembly into the cavity; and
6 d) using a molding compound to cover a remaining portion of
7 the heater subassembly.

1 15. A heater subassembly terminal block comprising:

- 2 a) a block body having a slot sized to receive a solid
3 state heater material, the block body including a pair of
4 opposing openings with the slot disposed therebetween, each
5 opening in communication with a bore in the block body, each
6 bore terminating at one end in a terminal entrance; and
7 a pair of terminals, one end of each terminal connected to
8 a lead wire, the other end of each terminal including a spring,

9 each terminal positioned in each bore, with a portion of each
10 spring extending beyond the opening and into the slot.

1 16. The terminal block of claim 15, wherein each opening
2 is formed by a channel in the block body, each channel including
3 a stop, with each spring terminal including a tang, the tang
4 positioned on the terminal to engage the stop once the terminal
5 is inserted to prevent removal of the terminal from the block.

1 17. The terminal block of claim 15, wherein the block body
2 has legs and a cross member forming a u-shape, with the openings
3 positioned in the legs and the bores positioned in a cross
4 member connecting the legs.

1 18. The heater subassembly of claim 1, wherein the block
2 body has legs and a cross member forming a u-shape, with the
3 openings positioned in the legs and the bores positioned in a
4 cross member connecting the legs.

1 19. The terminal block of claim 17, wherein each bore
2 includes a slot wider than the bore to accommodate wide portions
3 of the terminal.

1 20. The heater subassembly of claim 1, wherein each bore
2 includes a slot wider than the bore to accommodate wide portions
3 of the terminal.